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| 10/808,416 | 03/25/2004 | Shinya Kiuchi | 2004_0467A | 5279 |

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| EXAMINER |
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CASCHERA, ANTONIO A

| ART UNIT | PAPER NUMBER |
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2628

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/808,416 | Applicant(s) KIUCHI ET AL. | |
| | Examiner Antonio A. Caschera | Art Unit 2628 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 5-7, 11-14, 22, 23 and 26-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 15-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-4, 8-10, 15-21, 24 and 25) in the response to Election/Restriction dated, 07/20/06, is acknowledged.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 10, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Kagawa et al. (U.S. Patent 7,075,554 B2).

In reference to claim 1, Kagawa et al. discloses an image display device displaying an input image on an image display unit (see column 2, lines 48-57). Kagawa et al. discloses the system comprising an image data input circuit for receiving Ri, Gi, Bi input data and performing image processing upon the three color data according to the characteristics of the input image

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data (see column 6, lines 46-55 and further see rejection of claim 2 below). Further, Kagawa et al. explicitly discloses such image processing as conversion of the number of pixels or tone correction (see column 6, lines 53-54). Note, the Office interprets that the image data input circuit provides functionality equivalent to the characteristic value-calculating unit of Applicant's claim since Kagawa et al. explicitly discloses utilizing characteristics of the input image to perform image processing, these characteristics are seen as inherently derived or calculated from the image data (see rejection of claim 2 below). Kagawa et al. also discloses a color converter performing color conversion on the input image data using color characteristics data, to produce a second image data (see column 6, lines 57-62). Kagawa et al. explicitly discloses allowing a user to designate conversion characteristics using a conversion characteristics designation means (see column 7, lines 8-10). Kagawa et al. then discloses a conversion characteristics setting means calculating conversion characteristics data from the user designated conversion characteristics and setting the conversion characteristics in storage (see column 7, lines 11-20).

In reference to claim 2, Kagawa et al. discloses all of the claim limitations as applied to claim 1 above in addition, Kagawa et al. discloses calculating minimum and maximum values of α and β from among the image data (R_i , G_i , B_i) (see column 8, lines 35-45 and Figure 4) which the Office interprets as a plurality of characteristic values of the image input data.

In reference to claim 3, Kagawa et al. discloses all of the claim limitations as applied to claim 1 above. Kagawa et al. discloses a color converter performing color conversion on the input image data using color characteristics data, to produce a second image data (see column 6, lines 57-62, column 8, lines 35-55 and "conversion characteristics data," #2-6 of Figure 4).

In reference to claim 4, Kagawa et al. discloses an image display device displaying an input image on an image display unit (see column 2, lines 48-57). Kagawa et al. explicitly discloses such image processing as conversion of the number of pixels or tone correction (see column 6, lines 53-54). Note, the Office interprets that the image data input circuit provides functionality equivalent to the characteristic value-calculating unit of Applicant's claim since Kagawa et al. explicitly discloses utilizing characteristics of the input image to perform image processing, these characteristics are seen as inherently derived or calculated from the image data (see rejection of claim 2 above). Kagawa et al. also discloses a color converter performing color conversion on the input image data using color characteristics data, to produce a second image data (see column 6, lines 57-62, column 8, lines 35-55 and "conversion characteristics data," #2-6 of Figure 4). Kagawa et al. explicitly discloses allowing a user to designate conversion characteristics using a conversion characteristics designation means (see column 7, lines 8-10). Kagawa et al. then discloses a conversion characteristics setting means calculating conversion characteristics data from the user designated conversion characteristics and setting the conversion characteristics in storage (see column 7, lines 11-20). Kagawa et al. also discloses applying a "zero remover" to the input image data, which removes any zero valued data from the image data (see column 8, lines 56-59 and #7 of Figure 5). Note, the Office interprets such "zero remover" functionally equivalent to Applicant's "weight-calculating unit." Kagawa et al. discloses the system comprising an image data input circuit for receiving Ri, Gi, Bi input data and performing image processing upon the three color data according to the characteristics of the input image data (see column 6, lines 46-55). Kagawa et al. explicitly discloses calculating

minimum values of image data already applied through the “zero remover” (see column 8, lines 56-60 and #9a, 9b of Figure 5).

In reference to claim 10, Kagawa et al. discloses all of the claim limitations as applied to claim 4 above. The Office interprets the “zero remover” of Kagawa et al. to inherently operate in an “adaptive” fashion since it filters image data finding zero valued image data and removing such values from the input image data.

In reference to claim 24, claim 24 is equivalent in scope to the combination of claims 1 and 2 and is therefore rejected under similar rationale. In addition, Kagawa et al. discloses an image display unit such as an LCD or CRT (see column 7, lines 5-7 and #34 of Figure 1). Also, Kagawa et al. discloses an image output data circuit to produce image data which is then directly sent to the image display unit (see columns 6-7, lines 65-4 and #33 of Figure 1) which the Office interprets functionally equivalent to the “display control device” of Applicant’s claim.

In reference to claim 25, Kagawa et al. discloses all of the claim limitations as applied to claim 24 above. Kagawa et al. discloses an image display unit such as an LCD or CRT (see column 7, lines 5-7 and #34 of Figure 1). The Office interprets the LCD or CRT type display of Kagawa et al. to inherently comprise of a light source operable to illuminate the display. Further,). Kagawa et al. explicitly discloses allowing a user to designate conversion characteristics using a conversion characteristics designation means (see column 7, lines 8-10), these characteristics specifically being the exact intensities of red, green, blue of the display (see Figure 16). Kagawa et al. then discloses a conversion characteristics setting means calculating conversion characteristics data from the user designated conversion characteristics and setting

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the conversion characteristics in storage (see column 7, lines 11-20) to create an output signal passing it through to the image data output circuit (see “color converter”, #33-37 of Figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa et al. (U.S. Patent 7,075,554 B2).

In reference to claims 8-9, Kagawa et al. discloses all of the claim limitations as applied to claim 4 above. Although Kagawa et al. discloses suppressing a low level region of the image data by passing input image data through a “zero remover” (see above rejection of claim 4), Kagawa et al. does not explicitly disclose suppressing lower level regions and high level regions or middle level regions and high level regions in the input image. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide a filter or masking type operation upon image data which suppresses these values of image data since filters and masks can be programmed to refuse/allow any desired amount/value of data. Applicant has not disclosed that specifically suppressing lower level regions and high level regions or middle level regions and high level regions in the input image provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with the suppressing of lower levels of

image input data of Kagawa et al. because the exact values to mask or filter of an input image data is a matter decided upon by the inventor/designer of the invention since such an action would solely provide a customization of the invention as viewed by the inventor. Therefore, it would have been obvious to one of ordinary skill in this art to modify Kagawa et al. to obtain the invention as specified in claims 8 and 9.

Allowable Subject Matter

5. Claims 15-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claim 15, the prior art of record does not explicitly disclose the conversion characteristic determined assuming an abscissa axis showing an input image, ordinate axis showing an output image, a scale along the abscissa axis having low, middle and high regions wherein the average slope of the output image signal is greater in the middle region than any one of average slopes on the output image in the low and high regions.

In reference to claims 16-21, claims 16-21 depend upon objected to claim 15 and are therefore also object to.

References Cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. James (U.S. Patent 6,677,959 B1)

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- James discloses enhancing a digital image without distortion of color using color scaling functions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231


or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

 **PATENT EXAMINER**
10/4/06


KEE M. TUNG
SUPERVISORY PATENT EXAMINER